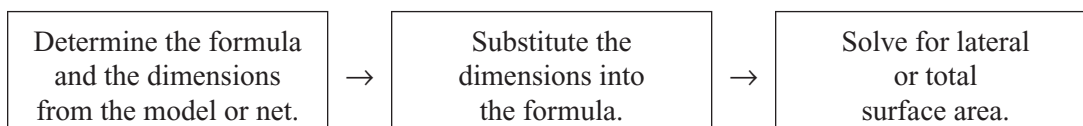




Objective 8 TEKS 8.8.A Review

8.8.A Find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models).

You can substitute the dimensions of a solid figure into a formula to find the surface area. The lateral surface area of a solid figure does not include the area of its base(s). The total surface area of a solid figure is the sum of the areas of all its surfaces.

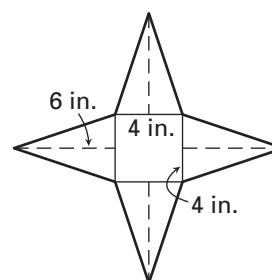


EXAMPLE

The net of a square pyramid is shown below. What is the total surface area of the pyramid?

Step 1 Find the area of the square.

$$\begin{aligned}
 A &= s^2 && \text{Formula for the area of a square} \\
 &= 4^2 && \text{Substitute side length of the square.} \\
 &= 16 \text{ in.}^2 && \text{Simplify.}
 \end{aligned}$$



Step 2 Find the area of one triangle.

$$\begin{aligned}
 A &= \frac{1}{2}bh && \text{Formula for the area of a triangle} \\
 &= \frac{1}{2}(4)(6) && \text{Substitute dimensions of the triangle.} \\
 &= 12 \text{ in.}^2 && \text{Simplify.}
 \end{aligned}$$

Step 3 Find the total area. The net of the square pyramid has one square and four triangles, so the total area is $16 + 4 \cdot 12 = 64 \text{ in.}^2$

YOU DO IT

What is the lateral surface area of the cylinder to the nearest tenth centimeter? Use 3.14 for π .

The lateral surface area of the cylinder does not include the **bases**. The formula for the lateral surface area of a cylinder is $S = 2\pi rh$.

Find the surface area of the cylinder.

$$S = \underline{2} \times \underline{3.14} \times \underline{1.5} \times \underline{9} = \underline{84.78}$$

$$S = \underline{84.78} \text{ square centimeters.}$$

The lateral surface area of the cylinder to the nearest tenth centimeter is 84.8 cm^2 .

